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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/790,697	03/03/2004	Yasusuke Iwashita	392.1879	4331

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EXAMINER

SMITH, TYRONE W

ART UNIT	PAPER NUMBER
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2837

DATE MAILED: 03/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/790,697	Applicant(s) IWASHITA ET AL.	
	Examiner Tyrone W. Smith	Art Unit 2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5,9 and 12 is/are rejected.
- 7) ☒ Claim(s) 3,4,6-8,10,11 and 13-15 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/3/04</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Objections

1. Claim 1 objected to because of the following informalities: Examiner suggest changing the "position detector" as described in claim 1 to "position detectors" for continuity of the invention. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 2, 5, 9, and 12 rejected under 35 U.S.C. 102(e) as being anticipated by Sonoda et al (6534944).

Regarding Claims 1, 2, 5, 9, and 12. Sonoda discloses a servo controller, which includes position control unit (Figure 2 items 21) for outputting velocity commands at each predetermined cycle on the basis of the position deviation between position feedback from a position detector (Figure 2 items 26, 36) and position command transmitted at each predetermined sampling cycle from control device or a host controller (Figure 2: position command); a velocity control unit (Figure 2 items 22, 32) for outputting torque command at each predetermined cycle on the

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basis of velocity feedback from velocity detectors (Figure 2 items 26, 36) and the velocity commands, wherein the synchronous control device (Figure 2 item 24, 34) synchronously controls two servomotors (Figure 2 items 25, 35) for driving the same control object and further comprises means (Figure 2 item 41; column 10 lines 1-20) for reducing the force that acts between the servomotors.

3. Claims 1, 2, 5, 9, and 12 rejected under 35 U.S.C. 102(e) as being anticipated by Toyozawa et al (6534944).

Regarding Claims 1, 2, 5, 9, and 12. Toyozawa discloses a servo controller, which includes position control unit (Figure 3 items 11, 21) for outputting velocity commands at each predetermined cycle on the basis of the position deviation between position feedback from a position detector (Figure 3 items 18, 28) and position command transmitted at each predetermined sampling cycle from control device or a host controller (Figure 3 item 3); a velocity control unit (Figure 3 items 12, 22) for outputting torque command at each predetermined cycle on the basis of velocity feedback from velocity detectors (Figure 3 items 17, 27) and the velocity commands, wherein the synchronous control device (Figure 3 items 13, 23) synchronously controls two servomotors for driving the same control object (Figure 3 item 4) and further comprises means (Figure 3 item 2) for reducing the force that acts between the two servomotors on the basis of the force that acts between the two servomotors.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the

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inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 2, 5, 9, and 12 rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al (5134354) in view of Kubota (5086263).

Regarding Claims 1, 2 and 9. Yamamoto discloses a servo motor control apparatus, which includes position control unit (Figure 1 items 19) for outputting velocity commands at each predetermined cycle on the basis of the position deviation between position feedback from a position detector (Figure 1 item 15) and position command transmitted at each predetermined sampling cycle from control device or a host controller (Figure 1 item 16); a velocity control unit (Figure 1 item 12) for outputting torque command at each predetermined cycle on the basis of velocity feedback from velocity detector (Figure 1 items 15, 21) and the velocity commands, wherein the synchronous control device (Figure 1 item 17) synchronously controls two servomotors (Figure 1 item 10 and Figure 4 item 10x and 10y) for driving the same control object (Figure 4). It should be noted that the position and velocity detectors could be duplicated for control of each servomotor (Refer to M.P.E.P. 2144.04: Legal Precedent as Source of Supporting Rational part VI section B). However, Yamamoto does not specifically disclose a

means for reducing the force that acts between the two servomotors on the basis of the force that acts between the two servomotors.

Kubota discloses a bi-axial synchronous driving apparatus, which includes a deviation counter (Figure 1 items 23, 24) for outputting commands signals (position/velocity) on the basis of the position deviation between position feedbacks from a position detectors (Figure 1 items 21, 22) and position command transmitted at each predetermined sampling cycle; a motor drive circuit (Figure 1 items 27, 28) for outputting torque command at each predetermined cycle on the basis of velocity feedback from position detectors and frequency/voltage converter (Figure 1 items 15, 21; column 4 lines 10-15) and synchronously controls two servomotors (Figure 1 items 3, 4) for driving the same control object (Figure 2); and a means (Figure 1 item 31) for reducing/correcting the force that acts between the two servomotors on the basis of the force that acts between the two servomotors (column 4 lines 16-68 and column 5 lines 1-20).

It would have been obvious to one of ordinary skill in the art at the time of invention to use the concept of Yamamoto's a servo motor control apparatus with Kubota's a bi-axial synchronous driving apparatus. The advantage of combining the two would provide a system capable of driving two axes in synchronization with each other at high accuracy, with substantial elimination of slippage or other mechanical problem associated with servo controlling an apparatus.

Regarding Claims 5 and 12. Kubota discloses a position control unit comprises position deviation offset calculation processor (Figure 1 item 31) for calculating the offset amount of the position deviation when the difference between the forces on the two servomotors exceeds a fixed value, and means for adding the position deviation offset amount calculated by the position deviation offset calculation processor to the position deviation (column 4 lines 16-68 and column 5 lines 1-20).

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It would have been obvious to one of ordinary skill in the art at the time of invention to use the concept of Yamamoto's a servo motor control apparatus with Kubota's a bi-axial synchronous driving apparatus. The advantage of combining the two would provide a system capable of driving two axes in synchronization with each other at high accuracy, with substantial elimination of slippage or other mechanical problem associated with servo controlling an apparatus.

Allowable Subject Matter

6. Claims 3, 4, 6, 7, 8, 10, 11, 13, 14 and 15 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Pertinent art related to the current invention is disclosed in the PTO-892.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tyrone W. Smith whose telephone number is 571-272-2075. The examiner can normally be reached on weekdays from 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin, can be reached on 571-272-2800 ext. 37. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

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may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tyrone Smith
Patent Examiner

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